IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Trademark Operations

Trademark Law Office 102 Examining Attorney: Elizabeth Beyer

Mark: **AUTOVOLT**

Applicant: Lorch Schweisstechnik GmbH

Serial No. 77/054,212

Filed: November 30, 2006
Attorney Reference: 31685-238906

Commissioner for Trademarks
P.O. Box 1451
Alexandria, Virginia 22313-1451

REQUEST FOR RECONSIDERATION

Sir:

In response to the final refusal of registration, please amend the identification of goods to read as follows:

Class 7: Electric welding machines; electric arc welding machines

Class 9: Electric welding and electric cutting apparatus, namely Electric blow torches, namely welding torches; accessories for electric welding and electric cutting apparatus, namely, electric cables, electrode holders in the nature of panel-mounted fuse holders for use with electronic glass and ceramic fuses, transient earth clamps for use in surge protection and grounding systems, charged plug couplings, electric pole terminals; accident protection equipment for welders, namely, protective eyewear, namely, welding shields, welding masks and welding gloves; controls for electric welding and electric cutting apparatus, namely, welding transformers

Please deduct the additional Class filing fee of $375.00 from Deposit Account No. 22-0261.

01-22-2008

U.S. Patent & TMOfc/TM Mail Rcpt Dt. #01

In response to the Examining Attorney's inquiry, the applicant has advised that the term AUTOVOLT does not have any significance in the relevant trade or industry; that the term AUTO is derived from the words AUTOMATIC or AUTOMATION but is not known to have any specific meaning or significance in the applicant's trade or industry; that the term VOLT is an electrical term defined as "the unit of an electrical potential difference," however, it has no special significance with respect to the applicant's goods.

Promotional materials dealing with the types of goods offered by the applicant are attached.

In view of the foregoing it is respectfully requested that the final refusal of registration be withdrawn, and that this application be forwarded for publication in the *Official Gazette*.

Respectfully submitted,

Date: January 22, 2008 By: _____

Mark B. Harrison
Venable LLP
P.O. Box 34385
Washington, D.C. 20045-9998
Telephone: (202) 344-4019
Fax: (202) 344-8300

Attorney for Applicant

LORCH

3 Year Warranty

Electrode welders

H 140
H 150
H 180c
H 180t
ISI 5 CL

MIG-MAG welders

MIG brazing

TIG-welders

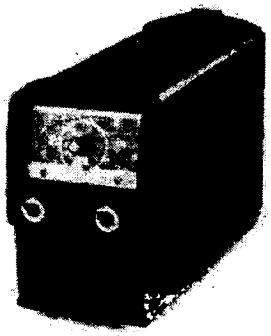
Plasma-Cutting

Accessories

Automation

Automatisieren - Zubehör

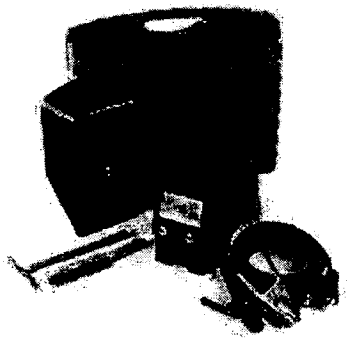
order here



H 140

Ideal for electrodes up to 3.25 mm
140 A and an outstanding duty cycle

Super lightweight. High duty cycle of 30% at 140 A. Simple to operate. Automatic adaptive hot start for perfect ignition. Anti-Stick system prevents electrode sticking. Arc force regulation provides support for difficult electrodes. Durable assembly design, insensitive to knocks, safety due to protection class of IP 23. High mains voltage tolerance, troublefree with long extension leads and good generators. Bears the S label denoting suitability for use in atmospheres subject to higher electrical risk. The standby system reduces fan noise, soiling and energy consumption. H 140, with mains cable, shock-proof plug, transportation belt. 3 Years full warranty, main transformer 5 years and spare part delivery 10 years.



H 140 assembly-pack

All neatly tucked inside. With everything you need for electrode welding. H 140, with mains cable, shock-proof plug, transportation belt, 3 m electrode - and ground cable 16 mm2, slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Complete in a sturdy case with handy compartments.

Technical data: H 140

Method	**Electrode-welding**
Electrode diameter	1,5 - 3,25 mm
Material electrode	steel / stainless steel
Recommended material thickness	up to 8 mm
Welding range	5 - 140 A
Duty cycle at max. current (40°)	30%
Welding current at 60% duty cycle (40C)	110 A
Mains voltage	230 V
Weight	4,5 kg
Order No.	105.0140.0 (PG 12)
Order No. assembly-pack	105.0141.1 (PG 12)

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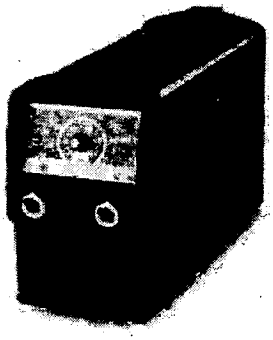
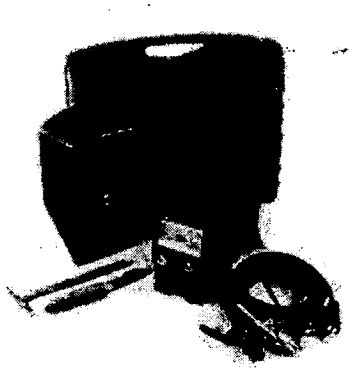


H 150

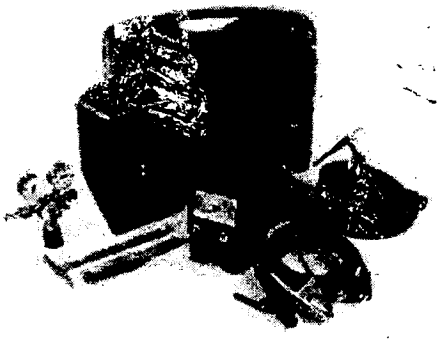
Ideal for electrodes up to 4 mm.
Higher powered with 150 A.
Good for TIG welding.

High performance reserves. Duty cycle of 40% at 150 A. Simple to operate. Automatic
adaptive hot start for perfect ignition. Anti-Stick system prevents electrode sticking. Arc force regulation provides support for difficult electrodes. Switchover to TIG welding with ContacTIG ignition for good TIG welding. Durable assembly design, insensitive to knocks, safety due to protection class of IP 23. High mains voltage tolerance, troublefree with long extension leads and good generators. Bears the S label denoting suitability for use in confined spaces in atmospheres subject to higher electrical risk. The standby system reduces fan noise, soiling and energy consumption. H 150, with mains cable, shock-proof plug, transportation belt. 3 Years full warranty, main transformer 5 years and spare part delivery 10 years.



H 150 assembly-pack

Everything you need for electrode welding on the move. An H 150, with mains cable, shock-proof plug, transportation belt, 3 m electrode- and ground cable 25 mm², slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Complete in a sturdy case with handy compartments.



H 150 TIG assembly-pack

With everything you need for TIG and electrode welding. An H 150, with mains cable, shock-proof plug, transportation belt, 3 m electrode- and ground cable 25 mm², slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Plus TIG set comprising: TIG valve torch WLV 17, 4 m; tungsten electrode, pressure reducer with volume and content manometer. All in a sturdy case with handy compartments.

Technical data: H 150

Method	**Electrode-welding**
Electrode diameter	1,5 - 4,0 mm
Weldable material	steel, stainless steel/
Recommended material thickness	up to 10 mm
Welding range	5 - 150 A

Duty cycle at max. current (40°)	40%
Welding current at 60% DC (40°)	135 A
Mains voltage	230 V
Weight	5,2 kg
Method	**TIG-welding**
Electrode diameter	1,0 - 2,4 mm
Weldable material	steel, stainless steel, copper
Recommended material thickness	1 - 4 mm / copper 1 - 3 mm
Welding range	5 - 150 A
Duty cycle at max. current (40°)	40%
Welding current at 60% DC (40°)	135 A
Mains voltage	230 V
Weight	5,2 kg
Order No.	105.0150.0 (PG 12)
Order No. assembly-pack	105.0151.1 (PG 12)
Order No. TIG assembly-pack	105.0152.2 (PG 12)

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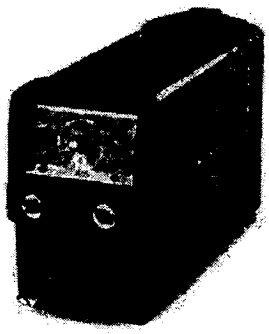
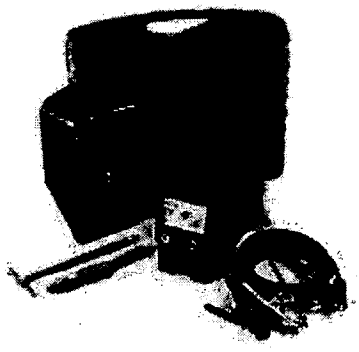


H 180c

Enough power for electrodes up to 4 mm.
Better TIG welding: 30 A more current plus gas management

Professional electrode and TIG welding. High performance reserves with 150 A electrode and 180 A TIG current. High duty cycle of 40% at 150 A (electrode) and 30 % at 180 A (TIG). Automatic parameter system for simple operation: The microprocessor controls the ambient settings on the basis of the welding current and process status. Operator prompting using illuminated symbols. During electrode welding, automatic adaptive hot start for perfect ignition. Anti-Stick system prevents electrode sticking. Arc force regulation provides support for difficult electrodes. Switchover to TIG welding with ContacTIG ignition. Convenient TIG logic operation: The welding current and shielding gas are switched on and off using keys on the torch. No more breakaway of the arc at the end of welding. Automatic gas pre/post flow protects tungsten needle and welding seam from oxidation. 2 and 4 stroke logic for quick tacking and convenient seam welding. Automatic down-slope prevents quality impairing "end craters" at the end of the seam. Fast down-slope using 2nd torch key prevents fall-through of the seam in case of workpiece overheating. Durable assembly design, insensitive to knocks, safety due to protection class of IP 23. High mains voltage tolerance, troublefree with long extension leads and good generators. Bears the S label denoting suitability for use in confined spaces in atmospheres subject to higher electrical risk. The standby system reduces fan noise, soiling and energy consumption. Remote control facility. H 180c, with mains cable, shock-proof plug, transportation belt. 3 Years full warranty.

main transformer 5 years and spare part delivery 10 years.



H 180c assembly-pack

With everything you need for electrode welding on the move. An H 180c, with mains cable, shock-proof plug, transportation belt, 3 m electrode- and ground cable 25 mm², slag hammer. wire brush, protection shield EN 166, welding glasses DIN 4646-47. Complete in a sturdy case with handy compartments.

H 180c TIG assembly-pack

With everything you need for TIG and electrode welding. An H 180c, with mains cable, shock-proof plug, transportation belt, 3 m electrode - and ground cable 25 mm2, slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Plus TIG set, comprising: TIG torch WLT 17K, 4m; tungsten electrode, pressure reducer with volume and content manometer, plug-in gas hose. Complete in a sturdy case with handy compartments.

Technical data: H 180c

Method	**Electrode-welding**
Electrode diameter	1,5 - 4,0 mm
Weldable material	Steel, stainless steel

Recommended material thickness	up to 10 mm
Welding range	5 - 150 A
Duty cycle at max. current (40°)	40 % / 150 A
Welding current at 60% DC (40°)	135 A
Mains voltage	230 V
Weight	5,7 kg
Method	**TIG-welding**
Electrode diameter	1,0 - 2,4 mm
Weldable material	Steel, stainless steel / copper
Recommended material thickness	1 - 6 mm / copper 1 - 3 mm
Welding range	5 - 180 A
Duty cycle at max. current (40°)	30% / 180 A
Welding current at 60% DC (40°)	150 A
Mains voltage	230 V
Weight	5,7 kg
Order No.	105.0180.0 (PG 12)
Order No. assembly-pack	105.0181.1 (PG 12)
Order No. TIG assembly-pack	105.0182.2 (PG 12)

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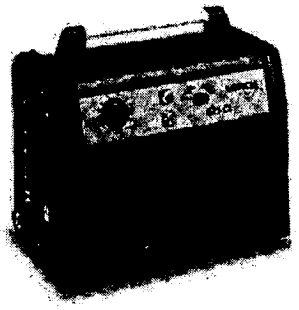

ISI 5 CL

There are lighter, smaller electrode inverters than the ISI 5 CL, some are cheaper.
But is there any better?
German competition law prevents us from saying more.
The ISI 5 CL is an investment in the future.

A milestone in the history of inverter construction. The ISI 5 CL combines t "ideals" of electrode welding like no other machine we make. When we star develop it, we were not primarily interested in building the cheapest possibl so that we could finance the construction of a new factory or our hobbies. N we were after was extraordinary power. Therefore, we did not make the ISI deliberately small, compact and as light as possible, but included all the pro technical features whithin a machine which was still easy to carry. This inve wonder thus has maximum voltage reserves thanks to the generously dimen Power-Mos power module and very fast arc control, combined with a compl filter. This all adds up to a very stable dc arc, which in turn means better we than many others! Every location and position. Not forgetting the 6 selectab programs, an extraordinary thin sheet pulse from 0.8 mm and a patented pov circuit. This is very unusual for an inverter, but unbelievably useful: it allow switch from 130 to 400 V. A feature which knows no limits. Make it ISI – b This isn't mere boosting (which we categorically reject), but simply an hone recommendation. 3 Years full warranty, main transformer 5 years and spare delivery 10 years.

Technical data: ISI 5 CL

Method	**Electrode welding/TIG we**

Electrode diameter	1,5-5,0 mm/ 1,0-3,2 mm
Material	steel/stainless steel
rec.material thickness (electrode/TIG)	up to 12mm/1-6 mm
Welding range (electrode/TIG)	3-200A/3-220A
Material TIG	steel / stainless steel/ copper
Recommended material thickness	1-6 mm / 1-3 mm
Current at 60% duty cycle (25°/40°)	200A/ 170A
Settings	infinitely variable
Mains voltage	230/ 400 V
Order No. (PG12)	115.0051.0
Scope of delivery	device with mains lead and adapter 400 V/ 230 V with s manual

High no-load voltage, infinitely variable current adjustment, 6 different welc programs: normal, soft, hot start 1 + 2, arc-force, thin sheet pulse. Dropped s proof , patented mains switchover 1~230 V/3~400 V, compensation of main fluctuations, remote-controllable, S-label, approved for use in small rooms v higher electrical risk, sturdy construction with a dust-proof encapsulated cor area , conforms with EN 60974-1, CE symbol. TIG welding with additional valve torch and pressure reducer: manual gas control via valve in torch hand

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TIG-welders

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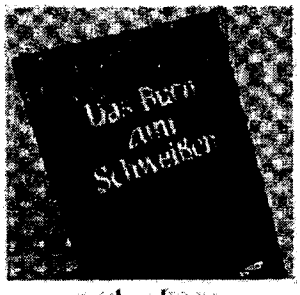

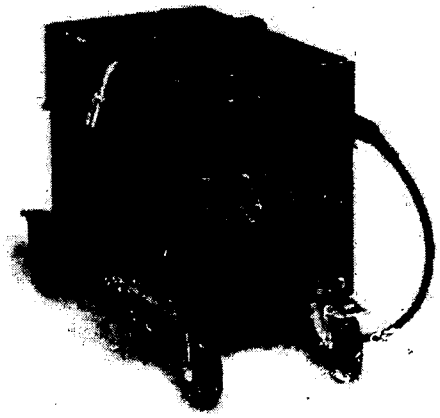

M 2020

The 2nd generation M series has taken on a cult status.
The MIG-MAG welding system for thin sheet and lightweight steel construction.

6 output models from 140 to 350 ampere. With up to 24 settings. Also with 4-roll drive. Lid opening to the side for improved access. Fully insulated inner floor to protect the welding wire basket against phase to ground short circuits. Absolute feed precision - more accurate pressure setting, no wire deformation, precise wire alignment and wire transport.
Special wire inlet guides made of moulded brass to ensure easier running for steel and stainless steel as well as aluminium.
Sophisticated electronics, compact central torch connection, adjustable wire roll brake, even easier operation and new, ergonomic outside front. A transformer-inductor combination which is of course copper-wound and ideally
matched. A sturdy diode rectifier with overvoltage protection.
Switching stages for optimum working points in every position. MIG-MAG logic, which controls the electronic welding current, feed, wire burn-back, gas postflow and spot welding time. Fully adjustable spot welding time. Air cooling for a higher duty cycle. Thermocontrol as overload protection.
Horizontal wire spool take-up, suitable for large and small spools with no extra adaptor. Removable ground cable with quick-action coupler. Galvanised sheet steel housing with powder-coated front and sides. Integrated gas cylinder holder and compliance with the

standards EN 60974-1 a, CE and S marks. 3 Years full warranty, main transformer 5 years and spare part delivery 10 years.

Technical data: M 2020

	Ideal for thin-sheet welding, e.g. on vehicles
Method	MIG-MAG-welding
Welding range	30-140 A
Settings	6
Duty cycle at max. current (25°/40°)	25% / 15%
Welding current at 100% duty cycle (25°/40°)	70A / 55A
Weldable wires steel	0,6-0,8 mm
Weldable wires aluminium	1,0 mm
Mains voltage	230 V
Material	steel/ stainless steel/ aluminium
Material thickness steel	0,8-3 mm
Material thickness aluminium	2 mm
Set wire diameter	0,6 mm - 0,8 mm
Order No. (PG12)	202.2020.1
Scope of delivery	System c/w torch ML 1500 3m, ground cable 4m 25mm², pressure reducer with volume and content manometer, mains cable 4m with shock-proof plug, fitted gashose, operating manual. **New: with basket coil adapter as standard**

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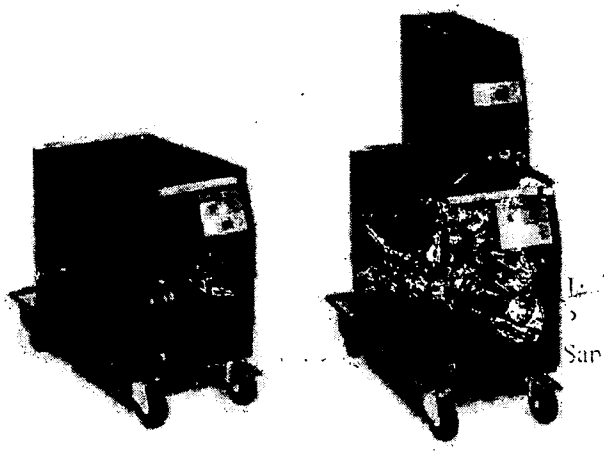
M 3000.
Middle and heavy weight champion.
Ideal with automatic adjustment.



M 3050 and 3070

M - for medium and heavy steel work

The M for medium and heavy-duty steel work. It copes not just with thick, t too. As a compact system or with a separate wire feeder. An out-and-out wo designed to cope with the tough all-round demands of your workshop. They with the same high-powered precision 4-roll feed which allows individual a of pressure on the roll pairs. This is the only way to guarantee trouble-free w all types of wire. The housing is just as stable as the gas cylinder holder. Th transformer-inductor power unit features such a finely tuned 24-step power characteristic which achieves the ideal arc for every conceivable welding as And the M series comes with a duty cycle ready to do some serious work. B feature of which our development boys (and 1 girl) are most proud of, has tc totally re-engineered control system. This degree of operating convenience, functional scope and durability is an all-time first in this machine category. new processor-controlled automatic adjustment for instance. The control sy automatically controls the wire feed in line with the selected step. A mere to the correction button is enough to optimise the feed rate. The active inductor adjusts automatically too. High-end technology from the prize-winning C-di

takes care of minimal spatter ignition and excellent light arc characteristics. how easy good welding ought to be. And when it comes to functions, the M everything covered: 2-stroke, 4-stroke, spot and interval welding. Adjustabl interval times. Ignition feed regulation, adjustable automatic free burning sy the knob for powerless wire insertion. The safety switch device prevents un wire transport. And the stand-by function - also a standard feature - helps sa and reduces dirt and noise. Because the fan and water cooling system are on when they are really needed. In systems with wire feeder, you regulate the w and wire feed on the spot. Which allows you to concentrate on what you are instead of walking backwards and forwards to the unit. In water-cooled syst exemplary centrifugal pump operates on demand and keeps noise to a minin Caution: In most cases, cheap water-cooled oscillating piston pumps are use causing vibration in the hose set and then in the torch. And their durability l something to be desired. Compliance with standard EN 60974-1; CE and S short: This is everything the perfectionist needs. And anyone who owns an M qualifies as one of those. 3 Years full warranty, main transformer 5 years an part delivery 10 years.

Technical data: M 3050 and M 3070

	M 3050	M 3070
Welding range	25 - 350 A	30 - 400 A
Settings	2 x 12 settings	2 x 12 sett
DC at max current (25°/40°)	45% / 30%/ 350 A	45% / 30%
Current at 100% DC (40°)	210 A	240 A
Mains voltage	3 x 400 V	3 x 400 V
Weldable wires steel/aluminium	0,6 - 1,6 mm / 1,0 - 1,6 mm	0,6 - 1,6 m
Material MIG-MAG	steel/stainless steel/aluminium	steel/stainl steel/alum
Recommended material thickness steel/alu	from 0,8mm / from 2mm	from 0,8m
Set wire	1,0 / 1,2 mm	1,0 / 1,2 m
Torch type (gas/water)	ML 3600 / MW 5500	- / MW 55
Compact system, gas	203.3500.0, PG 12	
Compact system, water	203.3510.0, PG 12	203.3710.(
Feeder system, gas, 1m interpass hose	203.3500.1, PG 12	
Feeder system, gas, 5m interpass hose	203.3500.5, PG 12	
Feeder system, gas, 10m interpass hose	203.3501.0, PG 12	
Feeder system, water, 1m interpass hose	203.3501.0, PG 12	203.3700.
Feeder system, water, 5m interpass hose	203.3510.5, PG 12	203.3700.:
Feeder system, water,	203.3511.0, PG 12	203.3711.(

10m interpass hose
Other lengths on request

Scope of delivery:

System, torch with 4m hose set, ground cable 50mm² 4m long, presseure rec basket coil adaptor K 300, mains cable 4m with CEE 32-plug, gas hose.
System **with** wire feeder: connection set is ready mounted.

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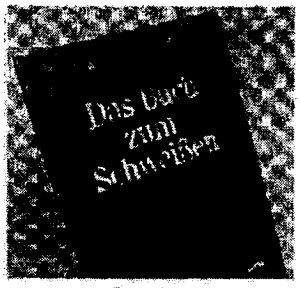
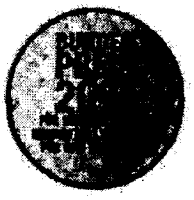


C-Dialog
Everything else is history.

The C-Dialog has been developed for professional organisations who need t reliably and economically.
The Digastep electronics control the welding parameters perfectly. The men programmed with the
knowledge of some of the most experienced of the world's welders.



Awarded with the federal price 2001 for outstanding innovative achievements for handcraft.

The new PowerMaster Torch. Torch and remote control are in a single uni the torch you can control current, wire feed speed and memory parameters – Tiptronic –without touching the main power source.

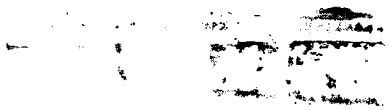
The housing **design** offers special **features** such as a low well for gas bottle and handles which can be used for movement by crane. Fewer than 20% of machines offer this feature. These handles also protect the water tank and pl lower front part of the machine. We could write a complete book about the design of the C-Dialog.

Stand-By Mode. The cooling system is activated only when the machine is operation. This reduces energy consumption and means less dust in the cool system.

A Power 1.1kW **Water Cooling Unit**
Unlike many competitors, cooling efficiency is monitored by measuring coo volume, rather than pressure. This ensures that the torch is well cooled. This seem unimportant, but will mean fewer burned out torches and the associate

The Tiptronic. 100 welding procedures. Stored in the memory - each one at the flick of a switch on the torch. Different parameters can be chosen for welding positions.

The Digastep-electronics. **No difficult adjustments with stepped switches tell the C-Dialog: material, wire diameter, gas. And you're ready.** You a material thickness, and the machine welds perfectly, right from the start. Ful automatic perfection –
but you retain personal control.

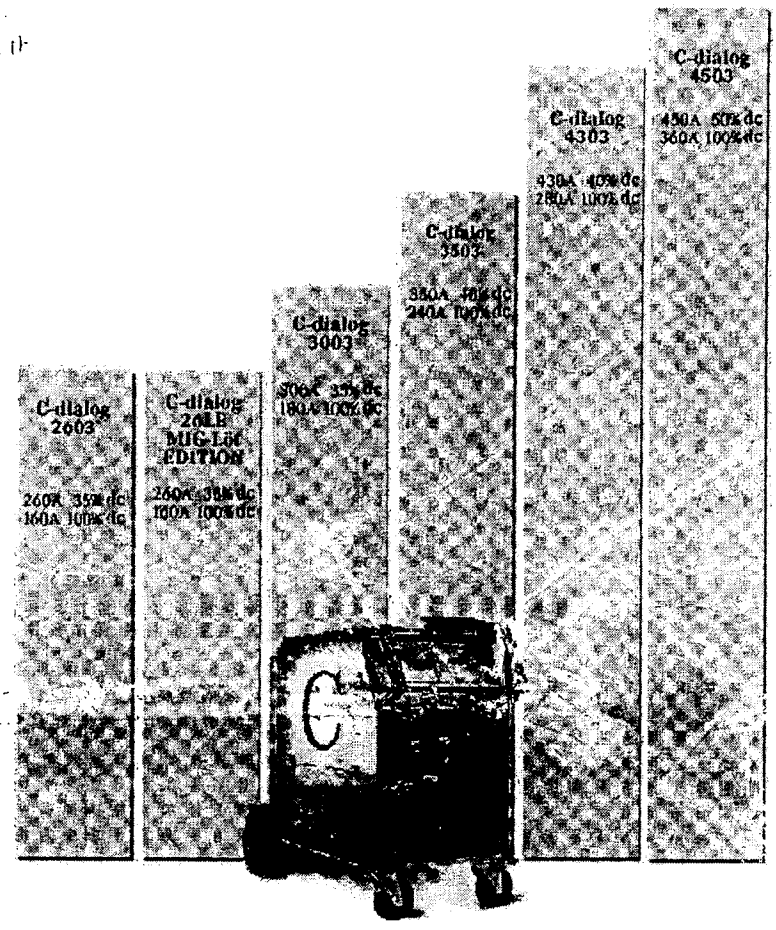


With the C-Dialog, movement of the earth clamp is unnecessary. The **Activ Induction System controls the welding induction unit and changes its characteristics as required.**

Important
The economic benefits of a good welding machine can still be realised y its purchase. Small differences in the purchase price are unimportant when compared with the quality of welding, the costs of re-work and long term du **Memory Control, Synchro Digital Automatic, CAN-Bus, etc. The C-Dia all these,** but in the final analysis it is the experience in assembling this tech that makes this machine one of the best MIG-MAG welding machines in the Take our word for it.
From Lorch that is a promise

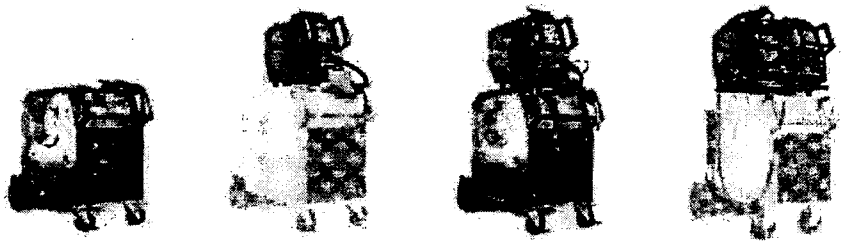
The C-dialog System.
Built to order at no extra charge.

1. Which performance?



Every C-Dialog gas- or water-cooled, with
PowerMaster Torch, gas pressure reducer and earth cable

2. Where would you like your wire feed unit?



Standard power source

In separate wire feed unit, so it is possible to weld up to 20 meters away from the power source.

The power source an wire feed unit. Ideal if you often weld with different types of wires and portability is necessary.

Two wire feed units for with different types of wire a maximum portability.

3. Which version of wire feed unit do you need?


Workshop wire feed unit


Assembly wire feed unit


Shipyard wire feed unit


Robot wire feed unit

4. Where do you want to operate?


power source


wire feed unit


or both


With remote control up to 5 meters away. Or divided secondary/primary

5. Which extras would you like to have?


Volt- and Ampmeter, in the power source, in the wire feed unit, or the remote


PowerMaster Push/pull torch Greater flexibility, Control in the handle - stroke of genius


Twin gas bottle trolley for 2x 50L gas bottles


Workshop and assemb line trolley


Wheeled case for workshop use


180° swivel unit for the wire feed unit. The welding source remains fixed, and the wire feeder can be


CAN-Bus connection for data exchange with remote computer or processor


Pocket-remote control Also available: Interface, PC software

Technical data of the C-dialog models:

Type	C 26LE	C 2603	C 3003	C 35
Welding				
Welding range A	30-260	30-260	30-300	30-3
Welding voltage V	11,4-27,0	15,5-27,0	15,5-29,0	15,5-
No-load voltage max.V	34,0	35,0	39,0	42,0

Voltage setting	Digastep with 41 power stages	Digastep with 41 power stages	Digastep with 41 power stages	Diga 41 p stage
100% duty cycle (25°/40°) A	180/160	180/160	200/180	260/
60% duty cycle (25°/40°) A	220/200	220/200	260/240	320/
Max. current (25°/40°)	45/35	45/35	45/35	45/4
Weldable wires steel Ø/ mm	0,6-1,2	0,6-1,2	0,6-1,2	0,6-1
Weldable wires aluminium Ø/ mm	1,0-1,2	1,0-1,2	1,0-1,2	1,0-1
Power				
Power voltage 3~50/60Hz V	400 +/- 20%	400 +/- 20%	400 +/- 20%	400 -
Power Consumption (100% duty cycle) kVA	5	5	5,5	
Power fuse, slow	16	16	16	25
Power plug	CEE 16A	CEE 16A	CEE 16A	CEE
Wire feed				
Wire feed speed m/min	0,1-25	0,1-25	0,1-25	0,1-2
Wire feed unit	4- feed rolls	4- feed rolls	4- feed rolls	4- fe
Device				
Protective System (EN 60529)	IP23	IP23	IP23	IP23
Noise emission dB(A)	<70	<70	<70	<70
Dimensions (LxWxH)				
Power source mm	1116x463x855	1116x463x855	1116x463x855	1116
Workshop wire feed case mm	639x281x498	639x281x498	639x281x498	639x
Installation wire feed case mm	675x275x522	675x275x522	675x275x522	675x
Weights				
Power source A Variant gas cooling kg	132,5	121	132	140,
Power source B Variant gas cooling kg	128	117	128	136
Water cooling kg	14,7	14,7	14,7	14,7
Workshop wire feed case kg	19,8	19,8	19,8	19,8
Installation wire feed case kg	15,5	15,5	15,5	15,5

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3 Year Warranty

Electrode welders

MIG-MAG welders

M 2020
M 2040
M 2060
M 2080
M 2090
M 2095
M 30
The new C dialog
P
Saprom S

MIG-brazing

TIG-welders

Plasma-Cutting

Accessories

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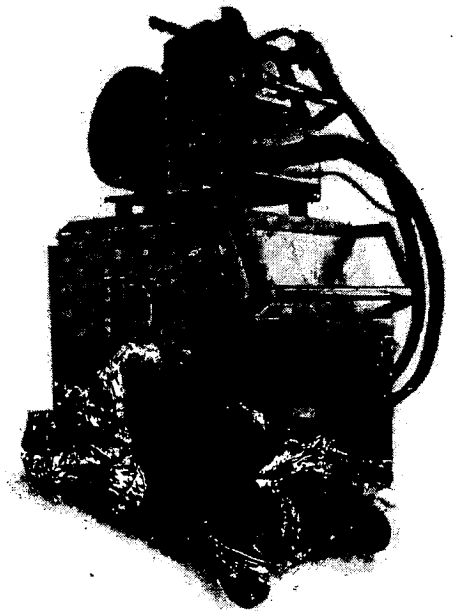

The P... 100% power

Digital MIG-MAG units.
Infinitely adjustable power package.
Tough and intelligent.

- Robust performance in transistor-technology with continuous adjustment.
- Easy to use.
- Digital arc-adjustment for perfect welding results.
- Micro-processor controlled wire feed, absolute constant.
- Digital panel for welding current and voltage.
- Display of selected and real value with Hold-function.
- Digital display for wire speed.
- Adjustable Hotstart avoids cold weld at the seam beginning.
- Control panel selectable in feeder case or in power source.
- Adjustable pre- and post-gasflow, ignition wire speed.
- Serially supplied with wire feed unit.
- Feeder unit available as workshop-, construction-, dockyard or robot-feede
- Selectable with or without water cooling of the torch.
- Optional PowerMaster-torch for external control by torch.
- Optional interface for automation.
- Also for electrode welding and gouging.

Technical data: P

		P 4000
Welding		
Welding range (I2min-I2max/U2min-U2max)	A/V	35 - 400 (15,8 - 34)
No load voltage max.	V	64
Power settings		continously adjustab
Characteristic trait		constant
d.c. 100% 40°C	A	310
d.c. 60 % 40°C	A	[illegible]0
d.c. at max. power 40°C	%	5[illegible]
Wire feed speed	m/min	0,1 - 2[illegible]
Mains		
Mains voltage 3~ (50/60 Hz)	V	400
Mains voltage tolerance	%	+/- 15
Power consumption S1 (100 %/40°C)	kVA	13,2
Power consumption S1 (60 %/40°C)	kVA	15,9
Power consumption S1 (max. power)	kVA	19,7
Power consumption I1 (100 %/40°C)	A	19,1
Power consumption I1 (60 %/40°C)	A	22,9
Power consumption I1 (max.power)	A	28,5
Power factor (at I2max)	cos phi	0,87
Mains fusing	A/tr	25
Mains lead	mm²	4 x 4
Mains plug		CEE32
Welding unit		
Protective system (EN 60529)		IP23
Isolation class		F
Cooling type		F
Noise emission	dB(A)	<70
Cooling unit		
Norm cooling capacity (1l/min)	kW	1,1
Max. pressure	Pmax(bar)	3,5
Pump		rotary pump
Dimensions and weight		
Dimensions power source (LxWxH) B-version	mm	1116x445x855
Dimensions workshop feeder case (LxWxH)	mm	639x281x498
Dimensions		

construction feeder case (LxWxH)	mm	675x275x522
Weight power source	kg	162,9
Weight workshop feeder case	kg	20,2
Weight construction feeder case	kg	15,8
Standard feature		
Feeder unit	castors	4
Standard equipment		MIG/MAG-torch, gr cable, presssure redu gas hose, interpass h mains cable, operati manual
Order No.		214.4000.0

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Saprom S
Digital MIG-MAG pulsing unit. Much better. Much more productive.

Whoever sees his future in his work should make no compromises by the choice of his MIG-MAG pulsing unit. In this case: the SAPROM S. The reasons are visible. Expect a lot.

PowerMaster-torch. With a remote control performance for power, wire speed and Tiptronic. Returning to the controls unit is no longer necessary.

Digitally memorised: knowledge of the best pulse welders of the world. Perf parameters for steel, stainless steel, aluminium and MIG-soldering. Most log ergonomic operation. No questions, no puzzles. Values appear in the display button has only 1 function. **TwinPulse®** serial standard. We have invented t procedure.

The casing. Usefulness in design. Lowered gasbottle holder, torch bracket, t specific construction is designed for tough resistance over many years.

Process control, digital. Controls in real time, precise bit by bit. Utmost reproducibility of the results. Warming, ageing and current tolerances – hav influence.

Data transfer and data back-up. Characteristics, individual settings and T are secured in the memory of the Saprom-S. By using a CAN-plug this data quickly be transferred to a PC or any other Saprom-S. We neither want chip readers nor disk drives in the power unit. Dirt disturbs secured functions.

Water-Cooling Unit 1,1kW power. Measures the amount of water, not the waterpressure. Only this way really signals the unit about the cooling of the These little things cut down on a few broken torches per annum.

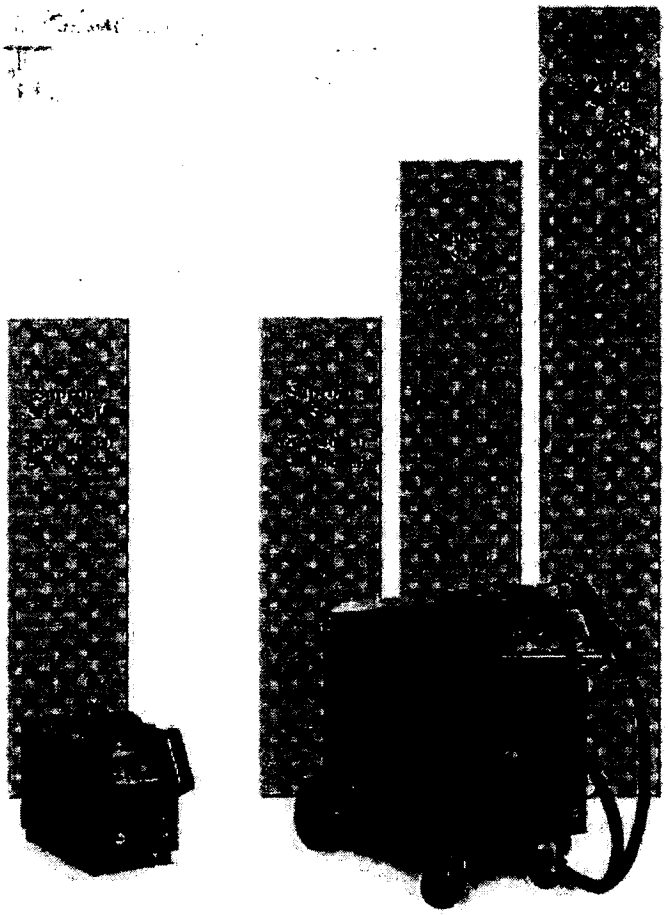
Standby-control. Cooling will start only if really necessary. Less energy consumption, noise and dirt in the unit.

Words about the truth

Economic efficiency of a welding machine is calculated by 96% of all co purchase. Subsequent costs are decisive – the purchase price amounts to ap Welding quality, rework, labour time, material loss, longevity – economic fa the constitutive years. Please trust these here printed information. Lorch – o Company is situated in Auenwald, which means "meadow woods". Auenwa (meadow wood people) do not tell lies. Each single product, which leaves o Company, is linked to our conscience. And all of us should keep a good con in mind.

Saprom S.
A system which results to demands.

1. How much power do you require?



Every Saprom-S comes with the PowerMaster torch, pressure reducer and cable.

Words about ...
...nomic ...

2. Where do you need the wirefeed unit?


In the compact unit


In a case. Allowing you to work in 20 meters distance from the power source. Linked by an interpass hose.


2 wire feed units. In case and power source. Ideal if welding different wires or diameters frequently. Saves the re-equipping.


2 wire feed units. In an twi For different types of wires a diameters and a maximum mobility.

3. Which type of feeder case?


Workshop-feeder case


Construction-feeder case


Dockyard-feeder case


Robot-feeder case

4. Where would you like the controls?


Power source


Feeder case


or in both


In the remote control or split secondary/primary

5. Which accessories are required for your task?


1x Volt- and Amperemeter is standard supply


PowerMaster-Push-Pull-torch Larger activity radius Controls in the handle - superb.


Twin-gasbottle-trolley For two 50 ltrs. gasbottles


Chassis for cases For each type of worksho construction feeder cases

Set of wheels for feeder cases
Rolling workshop feeder case
Inexpensive and very convenient.

180° Turnstile for the case
The unit is in a fixed position
and the case can be rotated.

CAN-Bus connection for data
exchange with remote
computer or processor.

Pocket remote contr
Ideal for mobile use.

Technical data of Saprom S.

Type	S 3 mobile	S3	S5
welding range I2 A	25 - 320	25 - 320	25 - 4(
welding voltage U2 V	15,2 - 30	15,2 - 30	15,2 -
idling voltage max. U0 V	81	81	81
voltage adjustment	continuous	continuous	contin
duty cycle 100% (25°/40°)	280/250	280/250	350/3:
duty cycle 60% (25°/40°)	320/280	320/280	400/3:
duty cycle at max. power (25°/40°)	75/40	75/40	75/50
weldable wires steel Ø mm	0,6-1,2	0,6-1,2	0,6-1,
weldable wires aluminium Ø mm	1,0-1,2	1,0-1,2	1,0-1,
weldable electrodes Ø mm	1,0-6	1,0-6	1,0-8
mains voltage 3 ~ 50/60 Hz	400 ± 15%	400 ± 15%	400 ±
output capacity by 100% duty cycle	10,7	10,7	14,3
output capacity max. kVA	15,1	15,1	19,4
main fuse delay A	16	16	32
power plug	CEE 16A	CEE 16A	CEE 3
power factor cos j	0,99	0,99	0,99
wirefeed unit	4-rolls	4-rolls	4-rolls
speed m/min	0,1-25	0,1-25	0,1-25
ICE protection class (EN 60529)	IP 23	IP 23	IP 23
noise emission dB(A)	<70	<70	<70
measurements (LxWxH) mm			
power source (A-model) mm	745x340x498	1116x463x812	1116x
power source (B-model) mm		1116x445x855	1116x
workshop feeder case mm		639x281x498	639x2
construction feeder case mm		675x275x522	675x2
power source A-model gas-	35	92,8	97,3

cooled kg			
power source B-model gas-cooled kg		86,8	91,3
water-cooler kg		14,7	14,7
workshop feeder case kg		20,2	20,2
Montage-Koffer kg		15,8	15,8
gas-cooled	ML 3600 PowerMaster	ML 3600 PowerMaster	ML 3(Power
water-cooled	MW 5300 PowerMaster	MW 5300 PowerMaster	MW 5 Power

Functional data

- 2-stroke, 4-stroke
- zero-current wire inlet
- gas- waterpump- and cooling-fan-test
- water-cooling and cooling-fan demand responsive in stand-by-modus
- extensive stored amount of characteristics
- TwinPulse®, Tiptronic and CAN-Bus are standard features

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- MIG-brazing
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  - A CuSi
- TIG-welders
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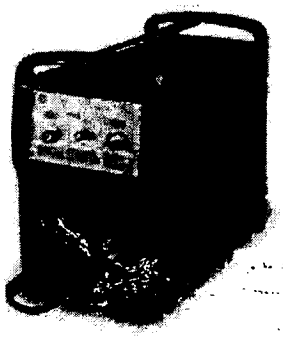
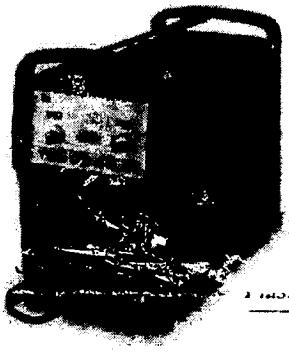
A and the ACuSi.
A true all-rounder with focus on MIG-brazing.
In 2 weight classes.
Either 170A or 220A.



A 1790 CuSi



A 2200 CuSi

First off, just a few words on the subject of MIG brazing. It happens at 900 (Welding happens at 1800 Co. Because the heat input is lower, there is no m the existing zinc layer and its corrosion protection effect remains intact. The uses CuSi3 wire. The wire forms the starting point for the arc, and the corrosionresistant filler material.

CuSi3 is as hard as steel wire, ensuring trouble-free wire transportation - so no reason not to make full use of this technology. Even a beginner can prod usable results with a CuSi.

The operating concept is quick and easy to learn no matter which process yc Just 3 steps to welding perfection. Your dealer has your CuSi ready and wai you - for an end to compromise solutions once and for all.

- At long last corrosion protected professional joining of galvanized steel sheet.
- Minimal heat, negligible voltage, practically no distortion.
- Also ideal for application on welding robots.
- The most essential process requirements in one machine.
- 19 kg high-end inverter technology. Reliability straight a standard socket.
- 3 steps to welding perfection.
- Lorch expert welding characteristic database SmartBase guides even beginners towards optimum results.

Technical data: A 1700 CuSi and A 2200 Cusi

	A 1700 Cusi
Welding range MIG-MAG infinitely variable	35 - 170 A
DC at max. current (40°)	25 % / 170 A
Current at 60 % DC (40°)	120 A
Mains voltage	230 V
Weldable wires steel /aluminium	0,6 - 0,8 mm / 1,0 mm
Material MIG-MAG	Steel / stainless steel / aluminium
Recommended material steel / aluminium	0,8 - 5 mm / 2 - 3 mm
Welding range TIG/electrode	5 - 150 A / 25 - 150 A
DC at max. current (40°) TIG/electrode	35% / 30%
Current at 60 % DC (40°) TIG/electrode	130 / 120 A
Electrode diameter TIG /electrode	1,0 - 2,4 / 1,5 - 3,25 mm
Weldable material TIG/electrode	Steel, stainless steel, with TIG also copper
Recommended material thickness for TIG	1 - 4 mm / copper 1 - 3 mm
Recommended material thickness for electrode	up to 10 mm
Weight	19 kg

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Electrode welders

MIG-MAG welders

MIG-brazing

TIG-welders

H 150
H 180c
H 180t
HT
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V
V24 mobile
Teg. Tungsten-Electrode Grinding Machine

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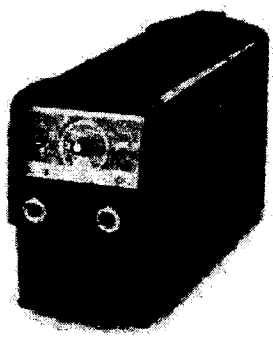
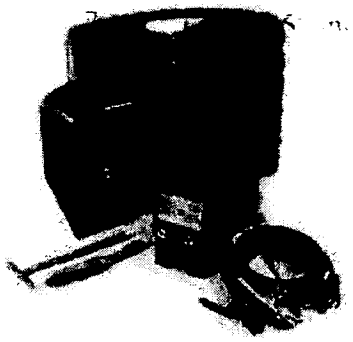


H 150

Ideal for electrodes up to 4 mm.
Higher powered with 150 A.
Good for TIG welding.

High performance reserves. Duty cycle of 40% at 150 A. Simple to operate. Automatic
adaptive hot start for perfect ignition. Anti-Stick system prevents electrode sticking. Arc force regulation provides support for difficult electrodes. Switchover to TIG welding with ContacTIG ignition for good TIG welding. Durable assembly design, insensitive to knocks, safety due to protection class of IP 23. High mains voltage tolerance, troublefree with long extension leads and good generators. Bears the S label denoting suitability for use in confined spaces in atmospheres subject to higher electrical risk. The standby system reduces fan noise, soiling and energy consumption. H 150, with mains cable, shock-proof plug, transportation belt. 3 Years full warranty, main transformer 5 years and spare part delivery 10 years.



H 150 assembly-pack

Everything you need for electrode welding on the move. An H 150, with mains cable, shock-proof plug, transportation belt, 3 m electrode- and ground cable 25 mm², slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Complete in a sturdy case with handy compartments.

H 150 TIG assembly-pack

With everything you need for TIG and electrode welding. An H 150, with mains cable, shock-proof plug, transportation belt, 3 m electrode- and ground cable 25 mm², slag hammer, wire brush, protection shield EN 166, welding glasses DIN 4646-47. Plus TIG set comprising: TIG valve torch WLV 17, 4 m; tungsten electrode, pressure reducer with volume and content manometer. All in a sturdy case with handy compartments.

Technical data: H 150

Method	**Electrode-welding**
Electrode diameter	1,5 - 4,0 mm
Weldable material	steel, stainless steel/
Recommended material thickness	up to 10 mm
Welding range	5 - 150 A

Duty cycle at max. current (40°)	40%
Welding current at 60% DC (40°)	135 A
Mains voltage	230 V
Weight	5,2 kg
Method	**TIG-welding**
Electrode diameter	1,0 - 2,4 mm
Weldable material	steel, stainless steel, copper
Recommended material thickness	1 - 4 mm / copper 1 - 3 mm
Welding range	5 - 150 A
Duty cycle at max. current (40°)	40%
Welding current at 60% DC (40°)	135 A
Mains voltage	230 V
Weight	5,2 kg
Order No.	105.0150.0 (PG 12)
Order No. assembly-pack	105.0151.1 (PG 12)
Order No. TIG assembly-pack	105.0152.2 (PG 12)

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MIG-MAG welders

MIG-brazing

TIG-welders

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H 180
H 180t
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Teg. Tungsten-Electrode Grinding Machine

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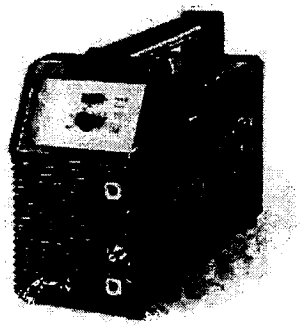

TIG Inverter HT 180
AC/DC. With transportation belt.

available from September 2006

AC/DC: TIG for steel, stainless steel, aluminium and electrode welding.
Despite the unmistakably handy design, the compact dimensions do nothing
to compromise operating simplicity.
Just ignite – immediate response – using minimal current, without touching the workpiece.
Can be switched over for ContacTIG ignition. For an intensive, focused, quiet arc, minimal heat input, narrow seam. 2-stroke/4-stroke/spot function. Pulsing operation –FastPulse, even.
Down-slope function using the 2nd torch button helps prevent "fall-through". The welding current is now conveniently controlled directly at the torch. Simply connect the UP/DOWN torch.
The variable alternating current frequency and balance take care of optimum aluminium results – something only big units have been able to offer in the past. Finally just a few words about adjustment.
3 inputs are all it takes – and the automatic parameterization system sets the optimum values for you. Fine tuning any time. From a perfect start to a perfect finish - a flawless seam without end craters.

Crash proof
The unit is placed on a workbench, someone knocks it down. Broken.
A working day written off. Units which have adequate protection are not immediately recognizable. The standard stipulates 20 cm. Ever seen a 20 cm high table? We protect the HT at 9 crash points. Which is enough. After all, no one wants to tow a strong box.

Design – for practical purposes only. Appearing with a Lorch T under your arm says something about your professional attitude. Compact dimensions, recessed control panel. Logical functions and clearly arranged displays. Nothing to detract from the effective, ergonomic styling.

Dust is death to welding equipment.
To some maybe – but not ours.
We consider this classic trick to shorten the service life of a welding unit to be somewhat below the belt. Dust spells the end for power electronics. Inside coating, an extra cooling channel for assemblies and a visible top filter are three answers for improved durability.

Just one of **many useful details**.
A dedicated space for the cable, integrated in the handle and closed using Velcro tape. An end to cable spaghetti. And that irritating cable waiting to trip you up just in front of your foot has now gone. A detail – maybe.
But these are just the points which add up to turn a good unit into a great one.

The trolley.
It places the welding unit at a safe and comfortable working height, while those generous and highly stable wheels make for optimized transport.
Order no. 570.3035.0 (PG 12)
The maxi trolley for additional 50l gas cylinders.
Order no. 570.3036.0 (PG 12)

Technical data: HT 180

Method	TIG - and electrode-welding
Electrode diameter TIG	1,0 - 3,2 mm
Weldable material	Steel, stainless steel/copper/alu
Recommended material thickness	1 - 8 mm/ 1 - 3 mm/ 1 - 8 mm
Elektrode diameter electrode	1,5 - 4,0 mm

Welding range	3 - 180 A, DC + AC
Adjustment	infinitely variable
Duty cycle at max. current (40°C)	35%
Welding current at 60% DC (40°C)	140A
Protection class	IP23
Mains voltage	230 V
Weight	13 kg
Scope of delivery	mains cable, shock-proof plug, transportation belt.

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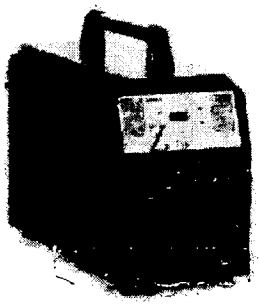
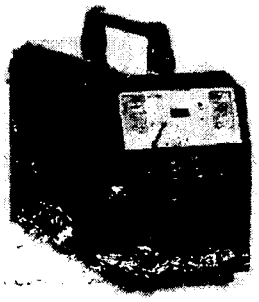
Lorch inverter plasma cutting units. Z 70 and Z 110. 4 times hotter than the sun itself. Incredible speed, durability, mobility.



Inverter-Plasma-Cutting-Unit Z 70, incl. torch, 29 kg, 70 Ampere



Inverter-Plasma-Cutting-Unit Z 110, incl. torch, 31 kg, 110 Ampere

Fact is: Units in this power class usually weigh around 100kg. These get eit weight lifted in the workshop like stone age monoliths or transported on site crane, if there happens to be one. This is history. **Two newly developed pla cutting-inverter** are playing this **easy (to-carry)** part in the market now. Th bolt upright, circular, around angles, forward, to the left and to the right, all conductive metals. Steel, stainless steel, aluminium, brass, copper. Sheet ste pipes/tubes, container or steel beams: coated or laminated surfaces, even pil sheets: usable with steel-, container- and construction work, air condition te on assembly. For cutting, preparation of welding seams, joint planing, hole

Due to the continuous variable adjustment of cutting- and power intensity, b an thin materials can be accomplished with a neat cutting edge. Microproces controlled plasma-logic enables the cutting of hole-sheets and grates withou interruption. Plasma-cutting is **quite simple:** you need the plasma-cutting-u compressed air. The produced plasma arc developes a temperature of up to Four times more than the surface of the sun. The aerate pushes the liquid ma of the joint. The concentrated energy input enables highest cutting speeds. T energy input means: minor heat, minor distortion and exact cutting edges – thin metal sheets.

The technology: **Primary Inverter-Powerpack.** Low(est) energy use. Cont pilot arc for firm ignition. **Continuous variable adjustment** offers an ideal cutting result according to the material thickness. This results in clean and e cutting edges and optimised work speed. **Microprocessor controlled logic:** frequency ignition and pilot arc for touchless ignitions. Soft switching for m

strain of nozzles, digital display of cutting current and compressed air. Airfl control, air-test-function for convenient pressure adjustment. Automatic coo flow increases the durability of the wear parts noticeable. Digital security sv display for all important status information. On demand supplied cooling wi by-switching: less power use, noise and contamination. **Combined plasma Cutting with distance-holder:** precise and exact cuts, long duty cycle, high speed. **Contact cutting with touch down** torch under narrow surroundings. easily exchangeable due to the central adaption system. Interface for automa solutions.

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Technical data: Z 70 and Z 110

	Z 70	Z 110
Procedure	Plasma-cutting	Plasma
Adjustable range cutting-current continuous	22-70 A	2[illegible]
Cutting current at 100% duty cycle (40°C)	50 A	60 A
Duty cycle at max. current (40°C)	60 % (70 A)	35 %
Mains voltage	400 V	400 V
Power fuse slow	16 A tr.	32 A t
Measurements approx. (LxWxH)	580x250x380 mm	580x2
Weight	29 Kg	31,5 K
Air consumption	170 l/min	200 l/r
Air pressure	5,5-7 bar	5,5-7 b
Max. cutting diameter (quality cut) steel	25 / 20 mm	42 / 3
Max. cutting diameter (quality cut) aluminium	17 / 12 mm	27 / 2
Max. cutting diameter (quality cut) stainless steel	18 / 14 mm	30 / 2
Order No.:	321.0007.0 (PG 14)	321.0((PG 1

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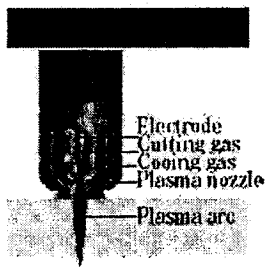

Basic knowledge: Plasma-Cutting

With plasma-cutting, the electrical arc burns between the non-melting elect workpiece. The arc is additionally constricted by a nozzle
and applied compressed air, which increases the intensity and stability consi Due to this constriction a hot heated gas with high energy content originates torch, which in turn converts this electrical energy into heat. This ionised ga transfuses the arc onto the workpiece is called plasma.

Cutable materials:
By using the plasma-cutting-procedure materials such as steel, stainless stee aluminium, copper, cast, brass, etc. can be cut.

The special advantages:
Due to the energy density of the plasma arc a high cutting speed is obtained. are steep, flash- and distortion free and of high economic efficiency.
Trouble-free handling and use of simple compressed air as cutting gas offer possibilities. Within steel industry, installation, container construction, etc.

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